USSR UDC 669.293.5'294:620.193:669.231

GLUKHOVA, A. I., ANDREYEVA, N. N., DONTSOV, S. N., and MOISEYEVA, I. S.

"Niobium-Tantalum Alloys Doped With Platinum"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 54-60 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I824 by the authors)

Translation: Supplemental doping of Nb-Ta alloys with small quantities of Pt raises their corrosion resistance under highly corrosive conditions. In 75% H_2SO_4 at 150° the corrosion rate of an alloy of Nb with 30% Ta doped with 0.2% Pt is 4-6 times less than the corrosion rate of this alloy without supplemental doping, with the corrosion rate of the alloy doped with 0.2% Pt not depending on the magnitude of the applied potential and equaling only 0.1 g/sq m·hr, whereas the corrosion rate of the alloy without supplemental doping increases with potentials more positive than + 1.7 v. Five illustrations. Bibliography of four titles.

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1/2 070 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INTERFEROMETRIC STUDIES OF A PLASMA IN A COAXIAL HIGH CURRENT ACCELERATOR, USING A HELIUM NEON LASER -U-

AUTHOR-(02)-ZAVENYAGIN, YU.A., DONTSOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--Z HURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, APR. 1970, P. 622-626

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INTERFEROMETER, GAS LASER, HELIUM, NEON, LASER APPLICATION, PLASMA DENSITY, PLASMA CONCENTRATION, HIGH ENERGY ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1314 STEP NO--UR/0368/70/012/000/0622/0626

CIRC ACCESSION NO--AP0124965

UNCLASSIFIED

2/2 070 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0124965
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A METHOD OF MEASURING PLASMA CONCENTRATION USING A GAS LASER AND A MULTIPLE WAVE INTERFEROMETER PLACED IN A VACUUM CHAMBER. THE RADIAL AND TEMPORAL CHARACTERISTICS OF THE PLASMA DENSITY VARIATION ARE OBTAINED FOR ONE OF THE CROSS SECTIONS OF A PLASMA JET GENERATED BY THIS COAXIAL ACCELERATOR. FACILITY: VSESOIUZNAIA KONFERENTSIIA PO FIZIKE NIZKOTEMPERATURNOL PLAZMY, 2ND MINSK, BELORUSSIAN SSR, NO. 18-22, 1968.

UNCLASSIFIED

Acc. Nr: AP0049827 Abstracting Service: CHEMICAL ABST. 5770 Ref. Code: UR 0456

D

84000z Photochemiluminescence of glycyltryptophan solutions. Effect of pH on the intensity and yields of chemiluminescence. Sapezhinskii, I. I.; Dontsova, E. G. (Inst. Khim. Fiz., Moscow, USSR). Khim. Vys. Energ. 1970, 4(1), 77-80 (Russ). The pH dependence of photochemiluminescence of 10^{-4} M glycyltryptophan solns. was analyzed. The intensity is max. at pH 8.5-10. The formation of free radicals ($\sim 5 \times 10^{-2}$ radicals/quantum) has little pH dependence, while the luminescence yield ($\sim 5 \times 10^{-5}$ quantum/radical) is strongly pH dependent for the peptide. B. J. Ikeler

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REEL/FRAME
19801749

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MECHANISM OF THE FORMATION OF LATEX FILMS FROM VINYLIDENE CHLORIDE COPOLYMERS AT ROOM TEMPERATURE -U-

AUTHOR-(05)-GUL, V.E., DONTSOVA, E.P., SNEZHKO, A.G., ROSSINA, T.B., KISELEV, M.R.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 671-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LATEX, VINYLIDENE RESIN, VINYL CHLORIDE, COPOLYMER, PHASE TRANSITION, VISCOELASTICITY, POLYMER STRUCTURE, PLASTIC FILM, PERMEABILITY MEASUREMENT/(U)VIKH65 VINYL CHLORIDE COPOLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0310 STEP NO--UR/0459/70/012/003/0671/0676

CIRC ACCESSION NO--AP0111504

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0111504

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMOMECH. CURVES (PLOTS OF DEFORMATION VS. TEMP.) SHOWED THAT VIKH-65 (35:65 VINYL CHLORIDE VINYLIDENE CHLORIDE COPOLYMER) FILMS HAVE A PHASE TRANSITION POINTS AT 3-8DEGREES (ONE GLASS STATE TO ANOTHER), 30-40DEGREES (GLASS TO VISCOELASTIC STATE), AND 70-80DEGREES (MELT FLOW POINT). THE KINETICS OF WATER VAPOR ADSORPTION, FILM DRYING, AND ELECTRON MICROSCOPY SHOWED THAT EVEN IN THE FILMS FORMED FROM MELTS PREHEATED LARGER THAN OR EQUAL TO 80DEGREES THE GLOBULES DO NOT COALESCE. THE PERMEABILITY OF THE FILMS DECREASES WITH THE TEMP. OF THE MELTS. THE MECH. STRONG FILMS OF LOW PERMEABILITY, PREPD. FROM MELTS PREHEATED TO 50-60DEGREES, HAVE A DIFFUSE BOUNDARY LAYERS WHICH PENETRATE INTO THE GLOBULES.

FACILITY: MOSK. TEKHNOL. INST. MYAS. MOLOCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--AGING OF BARIUM TITANATE -U-

AUTHOR-(02)-RAPOPORT, S.L., DONTSOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 384-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BARIUM TITANATE, SINGLE CRYSTAL, CRYSTAL AGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1567 STEP NO--UR/0070/70/015/002/0384/0386

CIRC ACCESSION NO--AP0125193

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125193

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF CHANGES IN 180DEGREES C DOMAINS IN BATIO SUB3 SINGLE CRYSTALS ETCHED WITH 4PERCENT HCL AND HF SOLNS. WAS INVESTIGATED. IN THE AGING PROCESS, THE WIDTH OF 180DEGREES C DOMAINS INCREASES, WHEREAS THE AMT. OF "DOMAIN", WALLS AND THEIR TOTAL SURFACE DECREASE CORESPONDINGLY, ACCORDING TO THE LOGARITHMIC DEPENDENCE OF THE CHANGE OF DIELEC. CONST. (EPSILON) WITH TIME. THE ANAL. OF THIS PHENOMENON PERMITS ASSUMING THAT THE DECREASE IN EPSILON DURING BATIO SUB3 AGING IS CAUSED BY 3 FACTORS: REDN. IN THE DOMAIN WALL SURFACE, DECREASING MOBILITY OF DOMAIN WALLS, AND INCREASE IN THE FRACTION OF THE VOL. OF THE CRYSTAL OCCUPIED BY C DOMAINS.

FACILITY: VOLGOGRAD. PEDAGOG. INST., VOLGOGRAD, USSR.

UNCLASSIFIED

USSR UDC 621.378.3

VASILENKO, YU. G., DONTSOVA, V. V., DUBNISHCHEV, YU. N., Novosibirsk

"Laser Doppler Velocity Meter Using a Fabry-Perot Interferometer"

Novosibirsk, Avtometriya, No 3, 1971, pp 90-92

Abstract: An experiment is described in which the linear local velocity of a rotating disc was measured. A single-frequency laser was used to increase the measurement accuracy. In the experimental setup, a helium-neon laser beam is passed through a lens and focused on the scattering disc. The backscattered light was observed on a Fabry-Perot etalon in front of which there was a collimating diaphragm. The experimental measurements were performed for a linear velocity of the investigated part of the disc of 60 m/sec. The mean square error of the measurements was ± 5 m/sec, and the relative error, 5%. The relative error decreases with an increase in velocity. A photograph of the interference rings obtained is presented.

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1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PHOTOCHEMILUMINESCENCE OF GLYCYLTRYPTOPHAN SOLUTIONS.
IDENTIFICATION OF THE LUMINESCENCE CENTER -U-
AUTHOR-(02)-SAPEZHINSKIY, I.I., DONTSOVA, YE.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(4), 838-41

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CHEMILUMINESCENCE, SPECTRUM, TRYPTOPHAN, AROMATIC KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605021/C02 STEP NO--UR/0020/70/192/004/0838/0841

CIRC ACCESSION NO--AT0141073

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0141073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEMILUMINESCENCE SPECTRA OF TITLE SOLNS. WERE REPORTED GRAPHICALLY. THE CENTER OF SUCH LUMINESCENCE IS A MOL. OF AROMATIC KETONE OF THE KYNURENIN TYPE. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

SAPEZHINSKIY, I. I., and DONTSOVA, YE. G., Institute of Chemical Physics, Academy of Sciences USSR, Moscow, Academy of Sciences USSR

"Photochemiluminescence of Solutions of Glycyltriptophan, Identification of the Luminescence Center"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 838-841

Abstract: It was suggested in earlier work by Sapezhinskiy that the luminescence center (emitter) in the photochemiluminescence of glycyltryptophan solutions must be formylkynurenine, a product of the disproportionation of peroxide radicals that are formed in the oxidation of the peptide. A study was conducted to verify the correctness of the assumption to that effect. Comparison of data on the chemiluminescence yield and the accumulation of kynurenine acting as a luminescence center tended to support this assumption. On addition of cysteine, which acts as an acceptor of peroxide radicals formed in the oxidation of glycyltryptophan, the intensity of luminescence dropped abruptly and the rate of accumulation of kynurenine decreased in proportion to it. Comparison of the kinetic curves of the increase of chemiluminescence and the increase, on excitation with the wavelength 500 mμ, of the optical density of

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SAPEZHINSKIY, I. I., et al, Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 838-841

luminescence at 365 mμ, the maximum of luminescence associated with kynurenine, indicated that the chemiluminescence was indeed due to kynurenine or a compound related to it, presumably formylkynurenine.
The authors thank N. M. EMANUEL' for his interest in the work.

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DONTSU, Z.F.

mechanics

A SET OF APPARATUS FOR MEASUREMENT OF OSCILLATIONS OF A MOVING TAPE

A. A. [illegible], P. A. Varanauskas, Z. F. Dontsu, V. T. Kolitchchuk, K. M. Ragul'-
skis, M. P. Sakharev, Ye. N. [illegible], A. [illegible] Chepulkauskas (Kaunas)

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This work presents a theoretical foundation, plus planning and experimental data for a set of apparatus for measurement of the transverse oscillations of a moving magnetic tape with uneven edges. The complex of equipment was developed at the laboratory of vibration studies of Kaunas Polytechnical Institute.

A number of works have been published in the domestic and foreign technical and patent literature on the measurement of transverse oscillations of a moving magnetic tape in a tape drive mechanism. Some works claim complete elimination of error resulting from uneven edges of an unevenly moving tape during measurement of transverse oscillations by a contactless method using sensing elements and an optical-mechanical system. It has been proved at the vibration studies laboratory recently that these errors cannot be completely eliminated, regardless of the number of stationary sensors used. Increasing the number of sensors decreases the influence of unevenness of tape edges on tape movement measurement. Other methods have been sought, reducing the error on the basis of the conditions of compactness of individual devices in the set of apparatus. Unevennesses with long repetition period, resulting from technological distortions of the tape during cutting, are random in nature, although they are near sinusoidal. Two sensors can be used, placed at a separation distance of one fourth the measured wave length. During motion, one sensor is uncovered, while the other is covered and the sum of the dis- [illegible]

[illegible]

sensor is uncovered with a delay of a quarter period of the wave being studied. This is eliminated as the distance between sensors is equal to one half wave length. As a result, precise selection of distance using this method of measurement decreases the errors.

SO: NASA Tech. Translation
NASA TT F-649
May 72

81

USSR UDC 539.389.2:669.15

BEREZINA, N. V., DONUKIS, T. L., KUDINOV, V. M., TITOV, P. V., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Structural Changes in Steel Kh18N9T During Explosive Welding"

Kiev, Metallofizika, No 40, 1972, pp 49-53

Abstract: An investigation was made of the weld seam of a steel Kh18N9T-copper bimetal, produced by explosive welding with contact rates of 2.7 and 3.9 km/sec. Strengthening of the steel to a depth of 0.5 mm was detected in the seam zone, and the rolling texture disappears in this same layer. At the rate of 3.9 km/sec, 30% alpha-martensite formed in the steel in the seam zone. As x-ray diffraction analysis showed, the width of the interference lines of the alpha-martensite were small and considerably less than for the martensite obtained during cold working. This suggests that the martensite is found in a weakened condition apparently as the result of heat liberation. 3 figures, 1 table, 5 bibliographic references.

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710007-2"

USSR UDC 539.389.2:669.15

DONUKIS, T. L., LOBODYUK, V. A., SAVVAKIN, G. I., TITOV, P. V., FEDAS, N. P., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"The Effect of Shock Loading on the Structure and Properties of Fe - Ni Alloys"

Kiev, Metallofizika, No 32, 1970, pp 88-94

Translation: The structure and properties of Fe - 30% Ni and Fe - 32% Ni alloys after the passage of shock waves of 100 and 300 kbar were studied. The loading was made by a shock of a steel plate. The time of the effect of high pressure was 1.4 microseconds. A shock wave of 300 kbar induces an almost full $\alpha \rightarrow \gamma$ transformation. A needle structure unusual for austenite, twins, and a cellular dislocation structure were observed in the γ-phase formed.

After the $\alpha \rightarrow \gamma$ transformation induced by the passage of a shock wave, hardness reached 270 Hv, and the γ -phase hardened by shock loading had a hardness of 220 Hv. The recovery of the

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DONUKIS, T. L., et al., Metallofizika, No 32, 1970, pp 88-94

γ-phase formed as a result of the $\alpha \rightarrow \gamma$ transformation under the effect of shock loading began at 200°C below the recovery temperature of 70% deformed austenite.

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USSR

UDC 539.4.015 + 534.141.2

DONUKIS, T. L., SAVVAKIN, G. I., CHIKOV, P. V., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences UkrSSR, Kiev

"Steel Strengthening by Explosive Loading"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 32-35

Abstract: Metal strengthening by means of impulse loading is based on the distribution of a compression impulse through a solid body, whose amplitude exceeds the fluidity limit by ten to hundred-fold, causing structural and phase changes in the material. This phenomenon occurs without manifested macroscopic changes in the material. Structural changes and the strengthening connected with it are due to the mechanical action of the shock wave and the temperature changes accompanying it. Therefore the strengthening depends on the load and the form and volume of specimens subjected to the shock. In this study steel strengthening was achieved by explosive deformation. A diagram for the experimental setup is included. The greatest strengthening was observed with extensive final deformations, and was accompanied by pulverization of mosaic blocks. Block pulverization increases with longer action of the force, but does not depend on the pressure itself.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NEW SYNTHESIS OF TRANS,1,ACETOXY,10,PROPYL,5,9,TRIDECADIENE, PROPYLURE, SEX ATTRACTANT OF PECTINOPHORA GOSSYPIELLA -U-

AUTHOR-(03)-SHAMSHURIN, A.A., KOVALEV, B.G., DUNYA, A.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1362-4, CHEM

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHEROMONE, UNSATURATED HYDROCARBON, INSECTA, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1015 STEP NO--UR/0020/70/190/006/1362/1364

CIRC ACCESSION NO--AT0121611

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0121611
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING PR SUB2 C IS TO CH(CH SUB2) SUB3 BR (I) WITH PH SUB3 P IN C SUB6 H SUB6 20 HR GAVE 62PERCENT QUATERNARY PHOSPHONIUM BROMIDE, AN OIL, WHICH WITH ME SUB3 COK IN THF HEATED 15 HR WITH ACO(CH SUB2) SUB4 CHO AT 60-2DEGREES GAVE PR SUB2 C IS TO CH(CH SUB2) SUB2 CH IS TO CH (CH SUB2) SUB4 OAC, N 20 OVER D 1.4630, B SUB0.5 100-10DEGREES, WHICH WAS PURIFIED ON AL SUB2 O SUB3. THIS WAS CHARACTERIZED BY MASS AND IR SPECTRA AND SHOWN TO BE IDENTICAL WITH THE SEX ATTRACTANT OF THE COTTON MOTH (P. GOSSYPIELLA). THE REQUISITE ALDEHYDE ABOVE, B SUB2 63-5DEGREES, N 18 OVER D 1.4319, WAS PREPD. FROM ACCH(CO SUB2 ET)(CH SUB2) SUB2 CH (OET) SUB2 BY HEATING WITH ETONA-ETOH AT 120-30DEGREES TO YIELD 38PERCENT ETO SUB2 C(CH SUB2)SUB3 CH(OET)SUB2, B SUB2 79-83DEGREES, N 20 OVER D 1.4288, CONVERTING THIS INTO ACO(CH SUB2) SUB4 CH(OET)SUB2, B SUB2 77-8DEGREES, 1.4256 (2,4,DINITROPHENYLHYDRAZONE M. 99-100DEGREES) BY REDN. WITH LIALH SUB4, AND KEEPING THE ACETAL IN AQ. ALC. H SUB2 SO SUB4 3.5 HR. PR SUB2 CO WAS CONDENSED WITH (ETO) SUB2 P(O)CH SUB2 CO SUB2 ET TO FORM 83PERCENT PR SUB2 C IS TO CHCO SUB2 ET; REDN. WITH LIALH SUB4 TO PR SUB2 C IS TO CHCH SUB2 OH, TREATMENT WITH PBR SUB3, THEN WITH CH SUB2(CO SUB2 ET) SUB2 ANION, SAPON. AND DECARBOXYLATION GAVE PR SUB2 C IS TO CH(CH SUB2) SUB2 CO SUB2 H; ESTERIFICATION WITH ETOH, REDN. WITH LIALH SUB4, AND REACTION WITH PBR SUB3 GAVE I, B SUB2 80-5DEGREES, N 20 OVER D 1.4736.
FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710007-2"

USSR

UDC 678.06-419.8:677.521/:678.643'42'5

DOOS, S. A., NIKOLAYEV, A. F., and BLYAKHAM, YE. M.

"Effect of Temperature on the Properties of New Epoxy-Fiberglass Plastics"

Moscow, Plasticheskiye Massy, No 11, Nov 70, pp 32-34

Abstract: The article presents the results of studied of thermal stability and thermomechanical properties of fiberglass-textolites based on self-setting epoxy resins containing methyl and dimethyl groups, and on these same resins hardened by resol phenol-formaldehyde resin. It was found that the maximum permissible temperatures for intermittent (short-period) wse of unstressed fiberglass-textolites should not exceed 200-230°C. These plastics can be used continuously for 180 days or longer without deterioration of physical and mechanical properties at temperatures of up to 160°C. The optimum composition for use under stress at high temperatures is 60 parts by weight of epoxy resin based on dimethyl derivatives of diphenylolpropane, 40 parts by weight of bakelite lacquer, and 1.8 parts by weight of catalyst (salt of triethanolamine and p-toluenesulfo acid). This plastic is deformed to a lesser extent as the temperature is raised than are other compositions, and its softening point is higher.

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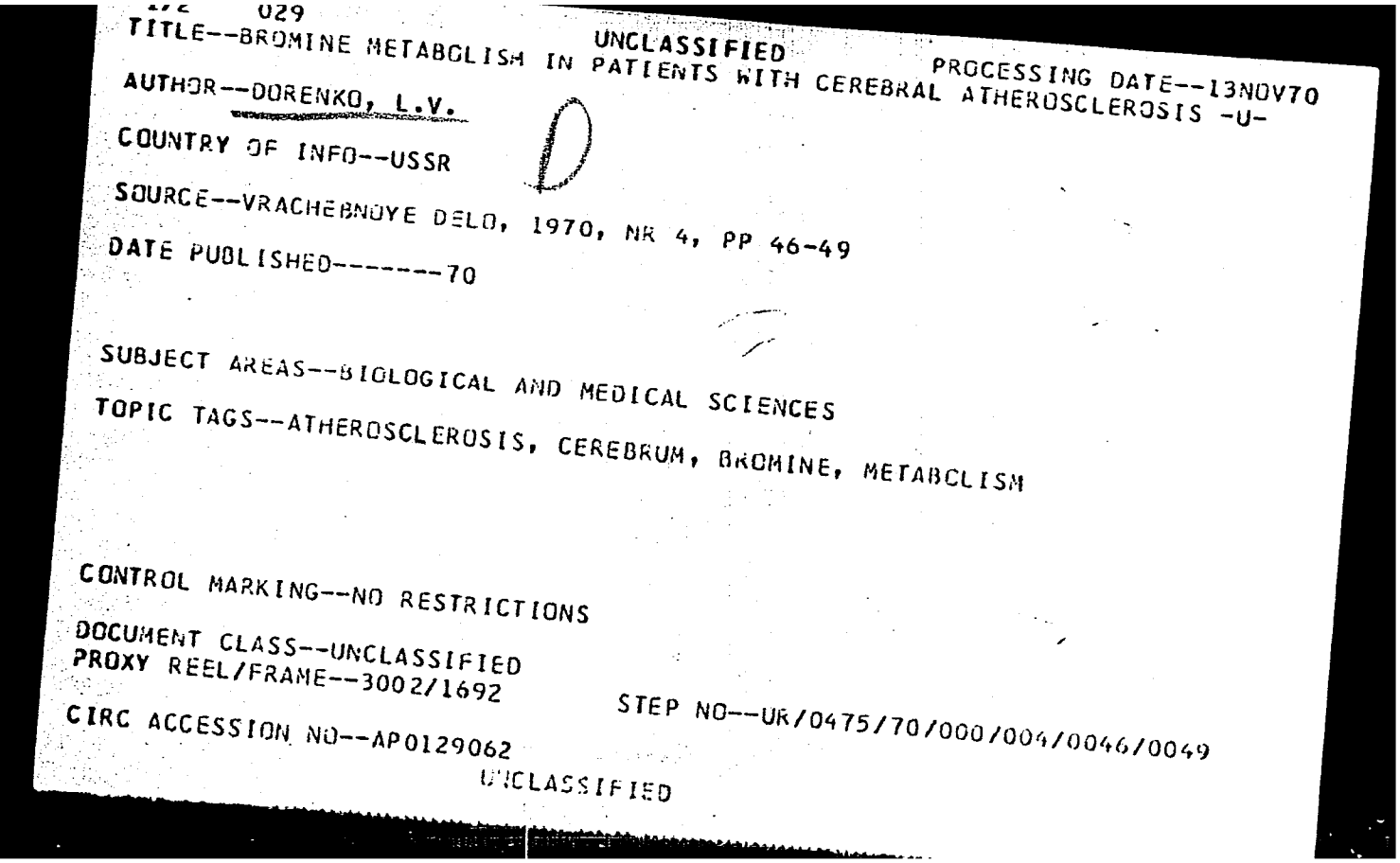

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UNCLASSIFIED

TITLE--BROMINE METABOLISH IN PATIENTS WITH CEREBRAL ATHEROSCLEROSIS -U-

PROCESSING DATE--13NOV70

AUTHOR--DORENKO, L.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 46-49

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ATHEROSCLEROSIS, CEREBRUM, BROMINE, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1692

STEP NO--UR/0475/70/000/004/0046/0049

CIRC ACCESSION NO--AP0129062

UNCLASSIFIED

2/2 029 UNCLASSIFIED

CIRC ACCESSION NO--AP0129062 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A STUDY OF 70 PATIENTS WITH DIFFERENT STATES OF CEREBRAL ATHEROSCLEROSIS REVEALED DISORDERS OF THE BROMINE METABOLISM IN 49 OF THEM. FIVE TYPES OF PATHOLOGICAL BROMINE CURVES ARE SINGLED OUT. THE CHANGES DEPENDED ON THE STAGE OF THEPATHOLOGICAL PROCESS. PRESCRIPTION OF BROMINE FOR PATIENTS WITH ATHEROSCLEROSIS SHOULD BE INDIVIDUAL, INDICATIONS BEING RESTRICTED FOR PATIENTS WITH LATE STAGES OF THE DISEASE. FACILITY: LUGANSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

UDC 536.24

USSR

DORFMAN, A. Sh.

"Exact Solution of the Thermal Boundary Layer Equations for an Arbitrary Distribution of the Surface Temperature in the Flow and the Prandtl Number Pr → 0"

Teplofiz. i teplotekhnika. Resp. mezhved. sb. (Heat Physics and Engineering. Republic Interdepartmental Collection), 1972, No. 21, pp 58-63 (from RZh - 34. Aviatsionnyye i raketnyye dvigateli, No 9, Sep 72, Abstract No 9.34.6)

Translation: An exact solution is obtained for the thermal boundary layer equations for an arbitrary temperature distribution $T_w(x)$ of the surface in the limiting case Pr → 0. The solution is constructed in the form of a series in terms of parameters containing derivatives of $T_w(x)$ with respect to the longitudinal coordinate. The equation determining the series coefficient is solved analytically. A simple formula was then established for the general term of the series. A comparison of the computational result by this formula with values for the coefficients obtained by numerical integration

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USSR

DORFMAN, A. Sh., Teplofiz. i teplotekhnika. Resp. mezhved. sb., 1972, No. 21, pp 58-63

of the equations determining the series coefficients in the case $Pr \neq 0$ shows that, beginning with the third term, the coefficients of the series do not depend either on the velocity gradient of the external flow or on the Prandtl number. 3 ill., ref. Resume.

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USSR

UDC 532.517.2

DORFMAN, A. Sh., VISHNEVSKIY, V. K.

"Boundary Layer in Non-Newtonian Exponential Fluids with Arbitrary Pressure Gradients"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 3, Mar. 71, p. 398-404.

Abstract: The boundary layer equations are solved for non-Newtonian fluids with an exponential rheological rule by a semi-integral method based on simultaneous solution of the equation of linearized motion and an integral relationship. Formulas and tables of coefficients are presented for various powers of non-Newtonian behavior of the fluid n, allowing calculation of the shear stress profiles with arbitrary distribution of velocity outside the layer. The distribution of shear stress over the surface of a circular cylinder at various values of n is obtained. The position of the stall point on the cylinder is calculated as a function of power n.

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USSR

UDC 536.24:536.42

DORFMAN, A. Sh., Kiev

"Solution of Heat Exchange Equation for Equilibrium Turbulent Boundary Layers with Arbitrary Distribution of Temperature of Surface Around Which Flow Occurs"

Mekhanika Zhidkosti i Gaza, No 5, 1971, pp 65-71.

Abstract: An approximate solution is presented for the heat exchange equation for equilibrium turbulent boundary layers, for which the distribution of velocities and turbulent viscosity factor can be described by functions of two parameters. The solution of the heat exchange equation is constructed for equilibrium layers on the assumption that the distribution of velocity in the layer and the turbulent viscosity factor are described by functions of the dimensionless coordinate $\eta = y/\Delta$, dependent on two parameters β and Re_*, while the turbulent Prandtl number Pr_t is either constant or is also a known function of η and the parameters β and Re_*. The surface temperature is considered an arbitrary function of the longitudinal coordinate, and the solution is constructed in the form of series with respect to form parameters containing derivatives of the surface temperature function.
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1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--APPROXIMATE SOLUTION OF THE INTERNAL PROBLEM FOR A TURBULENT BOUNDARY LAYER -U-

AUTHOR-(02)-DOREMAN, A.SH., LIPOVETSKAYA, O.D.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO FIZICHESKII ZHURNAL, VOL. 18, FEB. 1970, P. 224-232

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--APPROXIMATE SOLUTION, TURBULENT BOUNDARY LAYER, BOUNDARY LAYER EQUATION, FLOW SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0405 STEP NO--UR/0170/70/018/000/0224/0232

CIRC ACCESSION NO--AP0111598

UNCLASSIFIED

2/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0111598
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE PROBLEM OF THE DEVELOPMENT OF A TURBULENT BOUNDARY LAYER IN AN AXISYMMETRIC CHANNEL WITH ALLOWANCE FOR THE INTERACTION BETWEEN THE BOUNDARY LAYER AND THE FLOW CORE. THE PROBLEM IS SOLVED BY REDUCING THE SYSTEM OF FLOW EQUATIONS TO A SINGLE INTEGRODIFFERENTIAL EQUATION, FOLLOWING A PROCEDURE USED BY DORFMAN (1966) IN THE CASE OF LAMINAR FLOW. THE BOUNDARY LAYER CHARACTERISTICS ARE CALCULATED BY TRUCKENBRODT'S (1952) METHOD BASED ON THE SIMULTANEOUS SOLUTION OF INTEGRAL MOMENTUM AND ENERGY RELATIONS. EXPRESSIONS FOR THE COORDINATES OF THE SEPARATION POINT AND OTHER FLOW CHARACTERISTICS ARE DERIVED AS A FUNCTION OF THE REYNOLDS NUMBER AND THE GEOMETRICAL PARAMETERS OF THE CHANNEL. A SIMPLE APPROXIMATE METHOD OF CALCULATING BOUNDARY LAYERS IN CURVILINEAR CHANNELS IS PROPOSED. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT TEKHNICHESKOI TEPLOFIZIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

DORFMAN, I. M. UDC: 517.917

"Motion Stability of a Nonisochronic Oscillator With Negative Friction on a Limiting Straight Line"

Tr. Samarkand. un-ta (Transactions of the University of Samarkand) 1970, No. 181, pp 161-169 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B148)

Translation: The problem of the stability of motion of an object, described by an equation of the form

$$x'' + \omega^2 x = \varepsilon f(x,x') - \varepsilon A \cos \omega_1 t,$$

where $\varepsilon > 0$ is a small parameter and ω and A are constants, is studied. N. Rozov

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1/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SOLUTIONS OF EQUATIONS FOR THE THERMAL BOUNDARY LAYER AT A ROTATING AXISYMMETRIC SURFACE -U-

AUTHOR-(02)-DORFMAN, L.A., MIRONOVA, V.A.

COUNTRY OF INFO--USSR

SOURCE--INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, VOL. 13, JAN. 1970, P. 81-92

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMAL BOUNDARY LAYER, BOUNDARY LAYER EQUATION, TEMPERATURE DISTRIBUTION, VELOCITY DISTRIBUTION, DIFFERENTIAL EQUATION SOLUTION, COMPUTER CALCULATION, AXISYMMETRIC BODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1969/0941 STEP NO--UK/0000/70/013/000/0081/0092

CIRC ACCESSION NO--AP0107470

UNCLASSIFIED

2/2 034 UNCLASSIFIED

CIRC ACCESSION NO--AP0107470 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM IS SOLVED BY DORODNITSYN'S TRANSFORMATION FOR THE CASE OF COMPRESSIBLE GAS, THE VISCOSITY OF WHICH IS A LINEAR FUNCTION OF TEMPERATURE. THE PROFILES OF TEMPERATURE AND COMPONENTS OF THE VELOCITY VECTOR ARE PRESENTED IN A SERIES FROM EXPANDED OVER PARAMETERS DESCRIBING THE SHAPE OF THE MERIDIONAL SURFACE. A RECURRENT SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS IS OBTAINED FOR THE COEFFICIENTS AT THE ABOVE PARAMETERS WHICH ARE THE FUNCTIONS OF THE DIMENSIONLESS DISTANCE FROM THE SURFACE. THE RESULTS ARE SHOWN OF THE COMPUTER SOLUTION OF THE BOUNDARY VALUE PROBLEM FOR THE GIVEN DIFFERENTIAL EQUATIONS. THE PRESENT SOLUTION FOR A SPHERICAL SURFACE IS COMPARED WITH OTHER SOLUTIONS. FACILITY: TSENTRAL'NYI NAUCHNO ISSLEDOVATEL'SKII PROEKTNO KONSTRUKTORSKII KOTLOTURBINNYI INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR UDC: 621.372.852.1(088.8)

DORFMAN, L. G.

"A Separation Filter"

USSR Author's Certificate No 266095, filed 14 Oct 68, published 30 Jul 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2B238 P)

Translation: The filter covered by this patent is designed for ensuring independent operation of different devices into a common antenna or operation on different frequencies. It is formed by connecting the decoupled arms of several two-conductor bridges of the same or unequal length by equal feeder sections. N. S.

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USSR

UDC 621.372.413(088.8)

DORFMAN, L. G., SHISHKIN, A. S.

"Resonator"

USSR Author's Certificate No 254604, Filed 24 Nov 67, Published 3 Apr 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B126P)

Translation: The proposed resonator contains a parallel connected capacitance branch formed by an air capacitor and a short-circuited segment of a coaxial line and an inductive branch. In order to decrease the size and improve the Q-factor, the inductive branch is executed in the form of a diaphragm located in the plane of connection of the connecting coaxial lines perpendicular to the axis of the resonator and constituting the stator of the exciting capacitor. There are two illustrations.

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USSR

UDC 621.396.677:823.164

AMUNOV, A. G., GASICH, YE. V., ZAYATS, A. L., KOROBOV, B. S., DORFMAN, M. YE., VINOGRADOV, L. I.

"Rotating Mount"

USSR Author's Certificate No 271952, Filed 3 Mar 69, Published 1 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B86P)

Translation: A rotating mount for large-scale radio telescopes is introduced.

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Acc. Nr: DORFMAN M.E. Ref. Code:
AA0114620 Abstracting Service: UR 0482
Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 4-70

248391 SPHERICAL BEARING for use in machine building, where loads of several tons are carried, or for optical or radio telescopes, consists of a detachable footstep bearing 1 with spherical pivot 2. The pressure on the friction elements is reduced and dimensions are less if the lower part of the pivot is connected to an unloading rod 4, which rests on bearing disc 6 in a central socket 5. When the load applied by the machine 3 is vertical, it is taken up by the spherical section of the pivot, with the interchangeable bearing disc 6 used to ensure its correct position in relation to the footstep bearing surface. If the load is inclined at an angle not greater than 1°, part of the load is transmitted to the unloading rod 4, which flexes to reduce pressure on the bearing surfaces by up to 30 times. 29.5.68. as 1245126/25-27. M.E.DORFMAN. (4.12.69.) Bul.23/10.7.69. Class 47b. Int.Cl. F16c.

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REEL/FRAME
19940272

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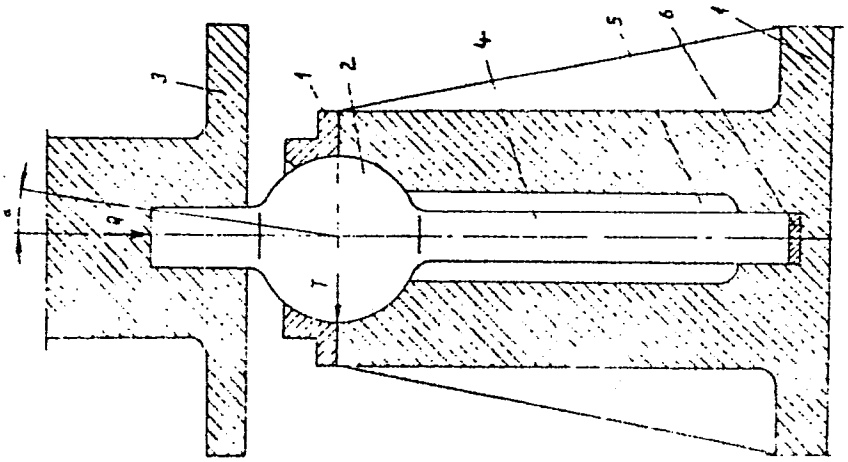
AA0114620



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19940273

USSR UDC 548.52

DORFMAN, V. F., PYPKIN, B. N., and COHERETYANSKIY, A. L., Institute of Electonic Control Machines

"Effect of Growth Rate and Crystallization Conditions on Defect Formation in Epitazial GaAs and GaP layers"

Moscow, Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

Abstract: Previous articles by the authors described the procedure and results of kinetic studies of the epitaxial growth of GaAs and GaP layers in the iodide sandwich process. It was shown that the principal kinetic regularites are exactly alike for GaP and GaAs. The present article attempts to study the effect of growth rate and crystallization conditions on defect formation in epitaxial layers. The main study was devoted to GaAs, but control measurements on GaP specimens obtained under similar conditions permit the conclusions to be applied to GaP, as well. Growth rates are from 10 to 6000 microns/hr, pressure in gas phase from 0.01 to 10 atm (C_1 up to 30 g/ℓ), substrate temperature from 700 to 1000° C, excess of Ga and As components up to 3 g/ℓ, process time 30 min., thickness of investigated

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DORFMAN, V. F., et al., Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

specimens from 100 to 3000 microns. Principal types of defects considered: two-dimensional dislocation network coinciding with the interface, "upright" dislocations intergrowing chiefly from the substrate, wide transition region with increased dislocation density, and polar twins.

The dislocation density in epitaxial GaAs layers does not exceed $1 - 3 \cdot 10^4$ cm^{-2} at a growth rate of up to 1000-1200 microns/hr (at V_g = 6000 microns/hr $N_d \simeq 1 - 5 \cdot 10^5$). It is assumed that the formation of the transition region is due to deviation from stoichiometry in the growing crystal as a result of α- or β-vacancy capture, which in turn leads to mechanical stresses. In accordance with this, the size of the transition region can be regulated by varying the gas phase composition (the effect can be eliminated by introducing excess Ga in the gas phase or intensified by introducing excess As).

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USSR

DORFMAN, V. F., et al., Kristallografiya, Vol 17, No 6, Nov-Dec 72, pp 1225-1231

Some electrophysical characteristics of epitaxial GaAs and GaP layers are given. Electroluminescent diodes in the red, yellow, and green wavelength ranges were produced from epitaxial GaP layers. The introduction of excess Ga in the gas phase during the growth of the epitaxial layers substantially increases the radiation intensity of the light-emitting diode.

The authors thank K. M. ROZIN and O. L. KREYNIN for useful discussion.

JPRS 57265
6 Aug 73

DORFMAN, V F

I-4. STATISTICAL KINETICS OF MULTIPHASE CRYSTALLIZATION

[Article by V. F. Dorfman, Moscow; Novoukirsk, III Simpozium po Protsessam Rosta i Stolknoveniya Tolyuyovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 6]

The given problem is especially significant for heteroepitaxy and for the formation of multicomponent films. The competition between grains having different orientation and properties taken place initially in the stage of formation of the crystallization centers, then as a result of mass exchange of the grain boundaries with the initial phase and, finally, on growth of the initial surface or volume.

The most effective means of analyzing the early stages is the method of microkinetic equations (each grain size of each type corresponds to an independent equation which permits us to find the corresponding distribution functions of time). The kinetics of the grain mass exchange with the initial phase are conveniently analyzed by using the combined magnitude of the boundaries (the "generalized" outline or "generalized" surface) of the grains of each type as the basic parameter.

A study of the surface or volume growth kinetics by anisotropically developing grains of different phases is made in terms of the multicomponent grain boundary and its "nodal" elements (the apexes and the intersection points, the edges and the lines of intersection). An analytical study was made of a number of special cases of two-dimensional and three-dimensional crystallization. For the two-dimensional model, the general equations are derived which in the limiting case become the equations for the Kolmogorov formula. The method also permits determination of the length of the total grain boundaries and the mean static size of the filled regions and pores considering anisotropy.

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UDC 542.941.'97:546.13'14

USSR

SOKOL'SKIY, D. V., DOBRYAN, YA. A., KAZANTSEVA, I. A., Institute of Organic Catalysis and Electrochemistry, Acad. Sc. KazSSR, Alma-Ata

"The Use of Oxygen for Catalytic Oxidation of Phosphine in Gases in Presence of Metal Complex-Catalyst"

Alma-Ata, Izvestiya Akademii Nauk KazakhskoySSR, Seriya Khimichoskaya, No 2, Mar-Apr 72, pp 36-44

Abstract: A study was carried out of the kinetics of phosphine oxidation with oxygen in the presence of a mixed catalyst $CuCl_2$-$HgCl_2$-HCl-LiCl-H_2O on a flow apparatus with an ideal mixing reactor. The oxygen oxidation rate depends on the activity of all the components of the system. The process includes the reactions of phosphine oxidation with copper (II) ions, and oxidation of Cu' with oxygen. The reaction goes via several routes, with the following complexes being formed: $HgCl_2PH_3$, $HgCl_3PH_3^-$ and $CuCl_2Ph_3^-$. The rate of the reaction is increased appreciably with the use of mixed catalyst. It is further increased due to an exchange reaction between the intermediate products, which takes place ($HgCl^-$ and $CuCl_2Ph_3^-$), accelerating the limiting stage of the formation of $HgCl_3PH_3^-$. Overall oxidation rate of phosphine with oxygen has been analyzed as a function of the activity of Cl^- ions.

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UDC 541.128+546.21

USSR

SOKOL'SKIY, D. V., DORFMAN, YA. A., and RAKITSKAYA, T. L., Institute of Organic Catalysis and Electrochemistry, Academy of Sciences KazSSR, Alma-Ata

"Oxidation of Phosphine with Oxygen in Presence of Ironiodosulfate and Iron-iodophosphate Catalysts"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 1, 1972, pp 155-158

Abstract: Inaa previous study it was determined that phosphine is oxidized with oxygen in following solutions: $FeCl_3$-$FeCl_2$-H_3PO_4-$HClO_4$-NaI-H_2O and $FeCl_3$-$FeCl_2$-Na_2SO_4-$HClO_4$-NaI-H_2O. A detailed mechanism for this oxidation is proposed. Phosphine does not react directly with oxygen in this reaction. It reacts with elemental iodine which is liberated during oxidation-reduction breakdown of the mixed iodophosphate and iodosulfate complexes with iron (III), while oxygen converts the phosphate and sulfate complexes of iron (II) into respective iron (III) complexes. The reaction rate depends on individual components of a series of subreactions in a complex way, making it impossible to select optimal reaction conditions on an experimental way. On the basis of theoretical considerations it was possible to develop equations for the calculation of kinetic parameters. Calculated and experimentally determined

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710007-2"

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SOKOL'SKIY, D. V., et al., Doklady Akademii Nauk SSSR, Vol 203, No 1, 1972, pp 155-158

values for the kinetics of phosphine oxidation with oxygen have been compared and found to be in good agreement.

2/2

UDC 546.18+546.143

USSR

SOKOL'SKIY, D. V., DORFMAN, YA. A., and RAKITSKAYA, T. L., Institute of Organic Catalysis and Electrochemistry, Kazakh Academy of Sciences, Alma-Ata

"Oxidation of Phosphine with Hydrogen Peroxide in the Presence of Bromide Ions"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLV, No 11, Nov 71, pp 2771-2774

Abstract: Though almost inactive with hydrogen peroxide in ordinary aqueous solutions, phosphine is strongly oxidized by H_2O_2 if KBr is present in the solution. But this catalytic oxidation of PH_3, important both for the chemistry of hydrogen peroxide and in the theory of homogeneous catalysis, has so far gone unstudied. Potassium bromide was added to an H_2O_2 aqueous solution surrounded by an atmosphere of $C_2H_2 + PH_3 + N_2$. Oxidation rates were determined as affected by acidity, KBr concentration, H_2O_2 concentration, and partial PH_3 concentration. Energy of activation was computed, and a tentative mechanism for phosphine oxidation suggested. The entire reaction is described quantitatively, and stability constants for the intermediate complexes formed are calculated. Optimal concentrations for PH_3, the hydrogen ion, KBr and H_2O_2 are arrived at.

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USSR

UDC 541.125 + 542.943:546.181.1+546.13

SOKOL'SKIY, D. V., DORFMAN, YA. A., POLE, G. P., Institute of Organic Catalysis and Electrochemistry, Academy of Sciences KazSSR

"Study of the Kinetics of Oxidation of Phosphine with Chlorine Solution"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 44, No 11, Nov 71, pp 2571-2573

Abstract: A study was carried out on the activity of PH_3, HClO, Cl_2 and the H_3O^+ and ClO^- ions on the rate of oxidation of phosphine with chlorine solution at 25°. A reaction mechanism has been proposed leading to the kinetic equation

$$-\frac{dCl^-}{} = \frac{4C_{Cl}\text{-}K_p P_{PH_3} (k_1 K_D [H^+] + k_2 [H^+]^2 [Cl^-] \quad K_G K_D}{K_D [H^+] + aH_2O + [H^+] \cdot [Cl^-] \cdot K_G K_D}$$

which described satisfactorily the reaction kinetics. The constants for chlorine hydrolysis, HClO dissociation and other parameters were calculated.

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USSR

UDC 542.942.6:546.562

SOKOL'SKIY, D. V., DORFMAN, Ya. A., and YEMEL'YANOVA, V. S.

"Phosphine Reduction of Cupric Thiocyanates in Solutions"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1918-1921

Abstract: The kinetics and mechanism of the phosphine reduction of cupric thiocyanates in solution are discussed. The mechanism of the reaction is rather complex and comprises a number of elementary stages in which the reaction rate appears to depend on the activity of the system's components. According to the given scheme, the reduction is of a catalytic nature with CNS^- ions being responsible for the catalysis. The kinetics of the reaction was studied on a circulation unit. Use was made of a gas mixture containing nitrogen, phosphine and acetylene, the phosphine concentration being 0.08-0.008% by volume. The phosphine concentration after the reaction p_{PH_3} was 0.005% by volume. The $CuCl_2$--KCNS aqueous solution potential was measured with a platinum electrode relative to the Hg/Hg_2Cl_2-HCl system and then recalculated on a hydrogen scale. Kinetic and potentiometric curves are given for the phosphine reduction of copper II thiocynates obtained for various PH_3 concentrations (% by vol.). A diagram shows 1/2.

USSR

SOKOL'SKIY, D. V., et al., Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1918-1921

semilogarithmic anamorphoses obtained for various C_{CNS^-} and P_{PH_3}. The innersphere decay rate constant of $Cu(CNS)_3^-$ (aq) is $1.7 \cdot 10^{-1}$ while the stability constant of $Cu(CNS)_3^-$ is $3.6 \cdot 10^{-2}$.

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1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ACTIVATION OF ACETYLENE BY PALLADIUM II BROMIDE COMPLEXES -U-

AUTHOR-(03)-SOKOLSKIY, D.V., SEGIZBAEVA, S.S., DORFMAN, YA.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 693-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM COMPOUND, BROMIDE, METAL COMPLEX COMPOUND, ACETYLENE, AQUEOUS SOLUTION, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1320 STEP NO--UR/0366/70/006/004/0693/0697

CIRC ACCESSION NO--AP0134994

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134994

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PASSAGE OF HC TRIPLE BOND CH THROUGH SOLNS. CONTG. (PD6R(H SUB2O) SUB3) PRIMEPOSITIVE, BR PRIMENEGATIVE, AND (PD6R SUB2 (H SUB2 O) SUB2) AT 98DEGREES AND HYDRATION GAVE HCHO, H SUB2 C:CHCHO, AND ACH. THE RATE OF HC TRIPLE BOND CH ABSORPTION BY THE SOLN. AND ITS HYDRATION RATE CHANGED WITH BR PRIMENEGATIVE CONCN.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CATALYTIC SYNTHESIS OF CARBONYL COMPOUNDS FROM ACETYLENE IN THE PRESENCE OF PALLADIUM,II, AND IRON,III, COMPLEXES -U-
AUTHOR-(04)-SOKOLSKIY, D.V., DORFMAN, YA.A., SEGIZBAYEVA, S.S., KAZANTSEVA, I.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 98-105

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE, HYDRATION, CARBONYL COMPOUND, PALLADIUM COMPOUND, IRON COMPOUND, COMPLEX COMPOUND, CATALYTIC ORGANIC SYNTHESIS, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0874 STEP NO--UR/0076/70/044/001/0098/0105

CIRC ACCESSION NO--AP0124537
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124537
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF HC TRIBLE BOND CH HYDRATION CATALYZED BY PDSO SUB4 AND FE SUB2(SO SUB4) SUB3 WAS INVESTIGATED IN NONGRADIENT CONDITIONS AT 50-100DEGREES. THE RATES OF HC TRIPLE BOND CH CONSUMPTION AND THAT OF CARBONYL COMPDS. FORMATION ARE NEARLY TEMP. INDEPENDENT. INCREASE OF THE OXIDN. POTENTIAL OF THE SYSTEM (FE PRIME3POSITIVE ADDN.) RAISES THE YIELD OF ALDEHYDES AND THE CATALYST STABILITY. THE SELECTIVITY OF THE PROCESS INCREASES WITH TIME. THE RATE OF CARBONYL COMPDS. FORMATION INCREASES WITH INCREASING PD PRIME2POSITIVE CONCN. UP TO 10 PRIME NEGATIVE3 G ION-L.P FURTHER INCREASE OF THE CONCN. HAS NO EFFECT. ALDEHYDES ARE FORMED ABOVE 70DEGREES.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF PROTON ACIDITY ON THE KINETIC ACTIVITY OF PALLADIUM II, COPPER I, AND MERCURY II COMPLEXES IN THE HYDRATION OF ACETYLENE IN

AUTHOR-(04)-SOKOLSKIY, D.V., DORFMAN, YA.A., SEGIZBAYEVA, S.S., NOGERBEKOV, B.YU.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 502-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM COMPOUND, COPPER COMPLEX, MERCURY COMPLEX, COMPLEX COMPOUND, HYDRATION, ACETYLENE, PROTON, SULFURIC ACID, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1979 STEP NO--UR/0080/70/043/003/0502/0507

CIRC ACCESSION NO--AP0132240

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132240

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE OF HYDRATION OF C SUB2 H SUB2 INCREASES WITH INCREASE IN H PRIME POSITIVE ACIDITY IN SOLNS. OF HGSO SUB4, CU SUB2 SO SUB4-CUSO SUB4, OR PDSO SUB4-FE SUB2 (SO SUB4) SUB3. THIS RESULT IS EXPLAINED BY A REACTION MECHANISM IN WHICH THE METAL COMPLEX (CH TRIPLE BOND CH.MEX SUBN) PRIMEM PLUS H SUB3 O PRIME POSITIVE IN EQUILIBRIUM (CH SUB2 TRIPLE BOND CH.MEX SUBN) PRIMEM PLUS 1 MINUS H SUB2 O YIELDS (CH SUB2:CH.H SUB2 O.MEX SUBN) PRIMEM PLUS 1 MINUS 2H PRIME POSITIVE YIELDS (CHOH:CH.MEX SUBN) PRIMEM MINUS 1 MINUS H PRIME POSITIVE YIELDS CHOH:CH SUB2 PLUS MEX SUBN, IN WHICH THE RATE IN THE LAST STEP IS INCREASED BY AN INCREASE IN (H SUB3 O PRIME POSITIVE).

FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

UDC 577.3

DORFMAN, Ya. G.

"Physical Phenomena Which Occur in Living Objects Under the Influence of Constant Magnetic Fields"

Vliyaniye Magnitnykh Poley na Biologicheskiye Ob"yekty, pp 15-23

Abstract: A description is given of three types of basic physical effects which arise with the action of artificial constant magnetic fields on biological objects. These include: 1) magnetic-hydrodynamic inhibition of the movement of blood and other biological fluids; 2) resilient vibrations of nerve, muscle, and plant fibers when bioelectric pulses are distributed in them (these vibrations may cause distortion or inhibition of the pulses themselves); 3) orientation and concentration changes in biologically active macromolecules in solutions, which are reflected in the kinetics of biochemical reactions and other physico-chemical processes.

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USSR UDC 538.574.4

GAVRILENKO, V.G., DORFMAN, YA.M. [Scientific-Research Radiophysics Institute]

"On A Theory Of Scattering In Media With Spatial-Time Fluctuations"

Izv. VUZ:Radiofizika, Vol XV, No 2, Feb 1972, pp 249-256

Abstract: The propagation is considered of electromagnetic waves in nondispersing media with weak spatial-time fluctuations, during which the rate of change of ϵ in time can be arbitrary. The work consists of two parts. In the first, expressions are obtained by the perturbation method for the effective dielectric constant, and the energy relations in media with spatial-time fluctuations are discussed. In the second part the effect is considered of rapid fluctuations on the spectrum of the scattering field. It is shown that the presence of time fluctuations effects the energy relations for a propagating wave. In particular, with sufficiently rapid fluctuations the average wave field increases despite the scattering. The authors thank N.G. Denisov, N.S. Stepanov, Yu. A. Ryzhov, and V.V. Tamoykin for useful discussions. 10 ref. Received by editors, 27 Apr 1971.

1/1

USSR

UDC 538.574.4

GAVRILENKO, V. G., DORFMAN, YA. M., Scientific Research Radio Physics Institute

"Theory of Scattering in Media with Time-Space Fluctuations"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 249-256

Abstract: A study was made of the propagation of electromagnetic waves in non-dispersing media with weak time-space fluctuations. The rate of variation of the dielectric constant was considered arbitrary. The tensor of the effective dielectric constant and the scattered field spectrum were calculated by the small perturbation method. The energy relations in media with time-space fluctuations and the effect of fast fluctuations on the scattered field spectrum are discussed.

The time fluctuations have a significant effect on the mean wave when their characteristic frequency is on the order of the frequency of the propagated wave. Parametric amplification of the mean field is possible. The energy of the total field (the mean field plus the scattered field) increases even in the presence of slow fluctuations as a result of the work of external forces varying the dielectric constant. The width of the scattered field spectrum is determined by the characteristic time of variation of the dielectric

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USSR

GAVRILENKO, V. G., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 249-256

constant. In the presence of fast fluctuations the spectrum not only is broadened but also significantly deformed.

1/2 026 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ON THE INTERPRETATION OF THE PRIMARY ENERGY SPECTRUM AND SIDEREAL DAILY VARIATION MEASUREMENTS WITH RESPECT TO THE PROBLEM OF COSMIC RAY
AUTHOR--DORMAN, L.I.

D

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY, AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC
DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, SPACE TECHNOLOGY, ATMOSPHERIC SCIENCES
TOPIC TAGS--ENERGY SPECTRUM, DIURNAL VARIATION, COSMIC RAY, CHEMICAL COMPOSITION, PRIMARY COSMIC RAY, GALAXY, UNMANNED LABORATORY/(U)PROTON UNMANNED LABORATORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD7C/605061/B08 STEP NO--HU/2506/70/029/000/0045/0050

CIRC ACCESSION NO--AT0144435
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIMULTANEOUS ANALYSIS OF EXPERIMENTAL DATA ON THE ENERGY SPECTRUM, CHEMICAL COMPOSITION, AND SIDERAEAL DAILY VARIATION OF PRIMARY COSMIC RAYS ALLOWS ONE TO SPECULATE ON THE PROBLEM OF COSMIC RAY ORIGIN AS FAR AS PARTICLES OF ENERGIES LESS THAN OR APPROXIMATELY EQUAL TO 10 TO THE 17TH EV ARE CONCERNED. WE SHOW THAT THE CR ENERGY SPECTRUM AND CHEMICAL COMPOSITON MEASUREMENTS CARRIED OUT ON THE SATELLITES 'PROTON' ARE IN AGREEMENT WITH THE CR SIDEREAL DAILY VARIATION MEASUREMENTS PROVIDED THAT THE NUCLEAR FRAGMENTATION DOES NOT TAKE PLACE IN THE INTERSTELLAR MEDIUM (AS USUALLY ACCEPTED) BUT IN THE ENVELOPE OF HTE COSMIC RAY SOURCES. FROM THIS ASSUMPTION IT FOLLOWS THAT THE LIFETIME OF COSMIC RAY PARTICLES IN THE GALAXY IS ABOUT 10 TO THE 7TH YEARS. IN GOOD AGREEMENT WITH CR LIFETIME MEASUREMENTS OF HTE BEIC CONTENT. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNUGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIIA RADIOVOLN, KRASNAYA PAKHRA, USSR.

UNCLASSIFIED

USSR UDC: 621.396.621.59

DORMAN, M. I., PODDUBNYY, V. N., Voronezh Polytechnical Institute

"A Resolving Receiver for a Data Transmission System With Resolving Feedback in the Case of Combination Phase-Difference Signal Keying"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331495, Division H, filed 31 Dec 69, published 7 Feb 72, pp 182-183

Translation: This Author's Certificate introduces a resolving receiver for a data transmission system with resolving feedback in the case of combination phase-difference signal keying. The device contains a memory element for the duration of a single transmission, a 45° phase shifter, a main information channel and an auxiliary information channel. The main information channel is made up of a multiplier, integrator, two-threshold device, resolver and decoder. The auxiliary information channel is made up of a multiplier, integrator, single-threshold device and resolver. As a distinguishing feature of the patent, the effect of error accumulation is reduced by connecting the second input of the multiplier in the auxiliary information processing channel to the output of the 45° phase shifter through

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USSR

DORMAN, M. I., PODDUBNYY, V. N., USSR Author's Certificate No 331495

an auxiliary 90° phase shifter, and by connecting the output circuits of the resolvers in the main and auxiliary information processing channels to a solution analyzer. The signals from the output of the solution analyzer are fed respectively to the return channel transmitter and to the decoder of the main information processing channel.

USSR

UDC: 621.396.626

DORMAN, M. I. and PODDUBNYY, V. N.

"Noise-Free Reception of OFT Signals in Presence of Correlated Interference"

Moscow, Radiotekhnika, Vol 25, No 2, 1970, pp 24-29

Abstract: The reception can be strongly distorted by the narrow-band (lumped) noises when a large number of radio stations are operating in a narrow frequency range. Therefore, it is expedient to evaluate the noise immunity of a OFT system utilizing both the multiplication and division algorithms in presence of both wide-band and narrow-band noises.

It was shown that the method of division provides a similar noise immunity as the method of comparison of polarities. The effect of narrow-band interference on the OFT receiver does not change the mean error probability, but leads to redistribution

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710007-2"

USSR

DORMAN, M. I., et al, Radiotekhnika, Vol 25, No 2, 1970, pp 24-29

of "zeros" and "units" distortions. This peculiarity can be utilized to introduce an artificial asymmetry of the transmission channels in systems with feed-back, thus improving their noise immunity. Such an asymmetry can be obtained by introducing an auxiliary signal at the input of the computer.

The distortion probability of the binal code symbols in the OFT system in presence of the wide-band (non-correlated) and narrow-band (correlated) noise were examined.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTERFERENCE FREE RECEPTION OF RELATIVE PHASE TELEGRAPHY (OFT: OTNOSITEL'NAYA FAZOVAYA TELEGRAFIYA) SIGNALS UNDER CONDITIONS OF

AUTHOR-(02)-DORMAN, M.I., PODDUBNYY, V.N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 2, 1970, PP 24-29

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--BINARY CODE, SIGNAL RECEPTION, SIGNAL DISTORTION, RADIO TELEGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1746 STEP NO--UR/0108/70/000/002/0024/0029

CIRC ACCESSION NO--AP0123547

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123547

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBABILITY OF DISTORTION IS DETERMINED FOR BINARY CODE SYMBOLS IN RELATIVE PHASE TELEGRAPHY SYSTEMS UNDER THE EFFECT OF WIDEBAND (NONCORRELATED) AND NARROWBAND (CORRELATED) INTERFERENCE. ALGORITHMS ARE INVESTIGATED WHICH ARE BASED ON SCALAR PRODUCTS, MULTIPLICATION AND DIVISION (PRODUCTION OF PARTICALS) OF THE UTILIZED SIGNALS.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--REACTION OF THE ETHYL ESTER OF DIETHYLPHOSPHONOACETIC ACID AND DIETHYLPHOSPHONOACETONITRILE WITH GLUTARIC ANHYDRIDE -U-

AUTHOR-(02)-KOVALEV, B.G., DORMIDONTOVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 932-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, ESTER, ACETIC ACID, ACETONITRILE, ANHYDRIDE, HYDROXYL RADICAL, CYCLOHEXENE, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1506 STEP NO--UR/0079/70/040/004/0932/0933

CIRC ACCESSION NO--AP0135167

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135167
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMOLAR AMTS. (ETO) SUB2 P(O)CH SUB2 CO SUB2 ET AND GLUTARALDEHYDE GAVE UP TO 40PERCENT 2,CARBETHOXY,3,HYDROXYCYCLOHEXENE, B SUB2 72-7DEGREES, N PRIME20 SUBD 1.4790, AND NOT AN ALDEHYDIC ESTER. SIMILAR REACTION WITH (ETO) SUB2 P(O)CH SUB2 CN GAVE 40PERCENT 2,CYANO,3,HYDROXYCYCLOHEXENE, B SUB1 120-4DEGREES, 1.50000. FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710007-2"

USSR

UDC 547.441.2

KOVALEV, B. G., and DORMIDONTOVA, N. P., Institute of Chemistry, Kishinev, Academy of Sciences Moldavian SSR

"Interaction of Ethyl Ester of Diethylphosphonoacetic Acid and Diethyl Phosphonoacetonitrile With Glutaraldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 932-933

Abstract: The condensation of ethyl ester of diethylphosphonoacetic acid with glutaraldehyde gives 2-carboethoxy-2-hydroxycyclohexene, yield 40 percent. Diethyl phosphonoacetonitrile reacts analogously with glutaraldehyde to give 2-cyano-3-hydroxycyclohexene, yield 40 percent. The interaction of the aldehyde with the phosphonates follows a mechanism consisting in the aldolization of the intermediate compound 2-cyano-3-hydroxycyclohexene with simultaneous Wittig reaction.

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USSR

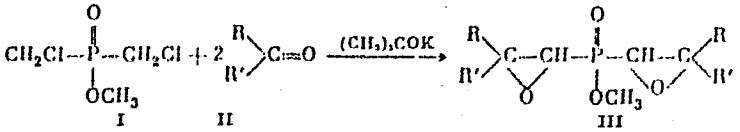
UDC 547.26'118

DORMIDONOV, I. A., MARTYNOV, V. F., and TIMOFEYEV, V. Ye., Institute of Applied Chemistry

"Bis(chloromethyl)phosphinic Acid Methyl Ester in the Darzens Reaction"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 479-480

Abstract: Bis(chloromethyl)phosphinic acid methyl ester (I) reacts with ketones (II) under the influence of potassium tert.-butoxide to give bis(1,2-epoxyalkyl)phosphinic acid esters (III) which have not been previously described.



I II III

a) R = CH_3, R' = C_6H_5; б) R = CH_3, R' = ; в) R, R' = $(CH_2)_5$.

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DORODNITSYN, A.

Computers

PRAVDA VIEWS PROBLEMS OF TRAINING COMPUTER CADRES

Moscow PRAVDA in Russian 25 Mar 72 p 3 L

[Article by Academician A. Dorodnitsyn and N. Moiseyev, USSR Academy of Sciences corresponding member: "Who Teaches the Computer To Compute?"

[Text] The training of cadres capable of efficiently using computer equipment is one of the urgent problems engendered by the scientific and technical revolution. Great efforts are being made in our country to solve this problem. Special faculties and departments have been opened in many universities and institutes. A system for retraining cadres has been established. Nevertheless, one cannot be satisfied with what has been done. Scientific research institutions, design bureaus and enterprises are currently experiencing a shortage of specialists in this field. With the growth of the output of computers and with the commissioning of more and more new automated control systems [ASU's] for sectors, enterprises and technological processes, the need for cadres will increase. In this connection it is useful to discuss certain questions regarding their training.

In our view the qualifications of a specialist is applied mathematics have not been defined with sufficient accuracy while the very concept of "applied mathematics" has been unified and narrowed incorrectly.

SO: FBIS Daily Report
07 April 72

For the creation and use of computer equipment specialists of diverse types are needed: This has not been adequately taken into consideration by the existing training system. It ought to be borne in mind that the future specialists who will begin studying in 1972 will commence independent work only in the middle of the next 5-year plan. Given the present rates for the development of electronic equipment it is necessary to insure in advance that they will prove to be capable of grasping ideas which today are only just being conceived in scientific laboratories and design organizations.

Certain trends can already be singled out in the training of cadres--trends which are now combined in the single specialty of "applied mathematics," although by the nature of their activity (and consequently by the structure of training) they differ substantially. Let us cite a few examples.

Specialists in the Sphere of Mathematical Physics. Computers are being used increasingly widely for the solution of diverse scientific and technical tasks. Considerable experience has been accumulated here. However, even in this most established trend the type of specialist has, in our view, been defined far from precisely. The syllabi orient the students toward solution of individual, specific computing tasks. At the same time the possibilities of third generation machines already enable the man-computer dialog to be simplified (and consequently the computer complex into a completely new means of researching into physical phenomena. The utilization of these possibilities is becoming increasingly urgent.

Specialists in the Sphere of Software. The transition to third generation computers divided of these specialists a profound understanding of the possibilities of controlling computing processes. The creation of control programs and operating plans essential for the working of computer complexes on a time-sharing basis--which provides for simultaneous utilization of computers by a large number of users--is becoming fundamental in the work of software specialists.

The Planning of ASU's. Experience shows that the planning of ASU's means primarily the devising of procedures for adopting decisions and devising systems of algorithms which enable these procedures to be automated. Consequently a mathematician who participates in the planning of ASU's must possess not only a group of skills for machine solution of problems involving the theory of operations but also the ability to efficiently perform systems analysis and to set up models of these systems in a computer. If a specialist in the mathematical physics is called at a professional level to know those branches of physics where he intends to apply numerical methods, the mathematician working on ASU projects must be professionally trained in the field of the theory of systems, specific economics and general questions of political economy.

The Automation of Planning. Scientific and technical progress is leading inevitably toward the appearance of increasingly complicated design projects. The planning of a contemporary passenger airliner or a major hydroengineering complex or the creation of the basis for developing a region frequently require a large collective of engineers, economists and scientists for 10-12 or even 15 years. At the beginning of work on a particular design project, a definite system of knowledge is utilized which is in accordance with the latest word in scientific and technical thought. But the rate of scientific change is such that by the time work is complete on the design project the ideas utilized frequently prove to be obsolete. The automation of planning with the aid of computers is the only way to accelerate planning and commissioning. In the next few years planning automation will become one of the basic fields of computer utilization.

Computer Architecture. The extensive spread of algorithmic languages does not solve all the problems in the automation of programming. The computer will have to become more "intelligent"--its internal language must be made qualitatively more complex. In the age of integrated circuits the planning of a computer complex is becoming more and more the sphere of computer architecture of the future is primarily a specialist in the sphere of computer architecture of the future is primarily a connoisseur of logic, of the theory of algorithms and automatic devices, of modern algebraic methods and other branches of knowledge.

The list of specialities which is cited here is not exhaustive. For example, the very important group of mathematicians capable of planning software for complicated technical controlled systems, data processing systems, and systems for controlling a scientific experiment has not been indicated. It is clear that it is impossible to accomodate all these various specialities on the procrustean bed of the narrowly understood speciality of "applied mathematics." The country not only needs many mathematicians, but also very different ones.

There are other flaws in the system of training "computer mathematicians." Today this training is being conducted by all universities and many technical VUZ's. They are working in accordance with standardized training plans which do not take into consideration the diversity of the national economy's requirements. In addition to being trained in the traditional disciplines, future specialists are being taught mechanics, radio engineering and certain other engineering subjects, as well as the rudiments of programming. Furthermore the training is being conducted out of contact with modern computer equipment. Many VUZ's which are turning out "computer mathematicians" either do not have computer centers at all or they are equipped with obsolete equipment and do not give the students any idea of the equipment which they will encounter in practice.

It is essential to determine the type of speciality more precisely, to assess the requirements for the different categories of cadres and to allocate the targets for training them among the VUZ's. It is useful to enlist for the solution of these questions a group of leading scientists in the country who have a good knowledge of the state of affairs and trends in the development of computer equipment. With their participation, the State Committee for Science and Technology, the Ministry of Higher and Secondary Specialized Education and the appropriate ministries and departments commt to elaborate a state-wide training program for computer specialists.

It is necessary to modify the system for providing educational establishments with this equipment. The VUZ's must receive the most up-to-date models of computers. The necessity for training students and teachers on the latest equipment is an important but by no means the only argument in favor of such an approach. It must not be forgotten that the computers of universities and VUZ's are considerably more accessible to a broad circle of specialists than the computers of departmental computer centers. This means too that the coefficient of their utilization (and consequently the recouping of expenditure on them) is, as a rule, considerably higher than in the majority of departmental computer centers.

Yet another point. Five years ago Academician M.A. Lavrentyev expressed the opinion that for the swiftest possible solution of the problem of training cadres one or several specialized model institutes and mathematical-technical VUZ's equipped with modern computer equipment are essential. When discussion got under way, this opinion was not supported. It is now necessary to admit, however, that M.A. Lavrentyev was right.

III. 7 Apr 72 L 4 USSR SCIENTIFIC AFFAIRS

The complexity of training cadres of "computer mathematicians," the very rapid evolution of computer equipment and, consequently, the constant changes in the requirements for cadres makes it essential to rapidly create one or several specialized educational establishments. It is necessary to assemble in these VUZ's the specialists with the highest qualifications in the sphere of computer utilization, to give them first class equipment, assign these VUZ's the obligations for training specialists of various orientations, to make them responsible for the structure of the training plan and syllabi of the basic courses, and to entrust them with the training and retraining of teaching cadres.

One such VUZ can be organized on the basis of the existing faculty of applied mathematics of the Moscow physical and technical institute. But it must be autonomous in all questions connected with the organization of the training process and the structure of the training plan. It is useful to have three faculties here: a faculty of mathematical physics, a faculty of computer system and software, and a faculty of planning and control automation.

Other decisions are also conceivable. In Moscow qualified specialists in computer utilization are at present concentrated mainly in the Moscow physicotechnical institute and the university. Perhaps these forces could be combined and gathered into a single collective? The organizational forms still require discussion. But in any case the creation of such a center is, in our opinion, essential.

BRIEFS

ARCTIC University STATION--All the participants in the drift of the Severnyy Polyus-16 [illegible] station have returned to Leningrad, leaving on the ice floe [illegible] and letters to Russian and English. The [illegible] basis drifted 1,500 days in record in the history of Soviet Arctic research. [Text] [Moscow Domestic Service in Russian 1400 GMT 28 Mar 72 L]

SEISMIC OCEAN OBSERVATORY--Obninsk--Construction of a building of a seismological observatory has begun in this town in Kaluga Oblast. Information on earthquakes will be fed by telephone to this center from all parts of the country. Recorded seismograms are already being collected in a special repository. Such accumulated material will make it possible to establish chains of regularities in the underground life of the planet. A system will be set up for forecasting earthquakes. [Text] [Moscow Domestic Service in Russian 0800 GMT 29 Mar 72 L]

UNDERWATER SEISMIC EXPLORATION--An instrument created by Soviet scientists for underwater seismic exploration has received high evaluation by specialists of many countries. This will help explorers [illegible] a seismic cross-section of seabed deposits, which is very important in prospecting for useful minerals in the seas. This instrument is being used especially effectively in conjunction with other equipment of research ships. All the data is being recorded on tape and enables [words indistinct] with the speed of [illegible] kilometres per hour. Overall the data is fixed quickly and reliably. [Text] [Moscow Domestic Service in Russian 0800 GMT 6 Apr 72 L]

1/3 021 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--NEW TRENDS IN CYBERNETICS -U-

AUTHOR--DORODNITSYN, A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, RADYANS'KA UKRAYINA, 14 JAN 70, P 2

DATE PUBLISHED--14JAN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INFORMATION NETWORK, DATA PROCESSING SYSTEM, COMPUTER CONTROL SYSTEM, COMPUTER CENTER, ALGORITHM, COMPUTER PROGRAM, COST ESTIMATE, R AND D MANPOWER UTILIZATION/(U)REPUBLIC ACADEMY OF SCIENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1773 STEP NO--UR/0089/70/000/001/0002/0002

CIRC ACCESSION NO--AN0104940

UNCLASSIFIED

2/3 021 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0104940

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ECONOMIC FACTOR IS OF GREAT IMPORTANCE IN EVALUATING SCIENTIFIC ACHIEVEMENTS. ACCORDING TO STATISTICAL DATA COMPILED OVER THE WORLD, IN THE APPLICATION OF COMPUTERS A RELATIONSHIP EVOLVED BETWEEN THE COST OF EQUIPMENT AND THE PROGRAMMING SUPPORT OF MATHEMATICIANS WHICH MAKES THE CONTACT OF MAN WITH MACHINE EASIER AND IMPROVES THE EFFICIENCY OF APPLICATION OF THE COMPUTER TECHNIQUES. THUS, IN THE FIFTIES 70PERCENT OF THE COST WAS ABSORBED BY EQUIPMENT AND 30PERCENT BY SUPPORT ACTIVITIES, IN THE SIXTIES THE RATIO WAS 50-50, AND ACCORDING TO FORECASTS FOR THE SEVENTIES IT WILL BE 30-70. THE EVER INCREASING SIGNIFICANCE OF SUPPORT ACTIVITIES IS CLEARLY EVIDENT FROM THE PRESENTED FACTS. STUDIES IN THIS FIELD WHICH TRADITIONALLY HAVE BEEN PURSUED BY THE UKRAINIAN SCIENTISTS UNDER THE LEADERSHIP OF ACADEMICIAN V. GLUSHKOV ARE HIGHLY REGARDED NOT ONLY IN THE USSR, BUT ABROAD AS WELL. OVER A LONG PERIOD OF TIME PROGRAMMING OF COMPUTER PROBLEMS WAS REALIZED IN THE FORM OF MACHINE LANGUAGE. IT WAS WELL UNDERSTOOD BY THE MACHINE BUT THE MATHEMATICIAN WAS HARNESSED WITH MUCH ROUTINE AND ROUGH WORK: CONVERSION OF THE CALCULATIONS INTO ELEMENTARY OPERATIONS SO THAT THEY MAY BE UNDERSTOOD BY THE MACHINE. THE UKRAINIAN SCIENTISTS FOR THE FIRST TIME IN THE USSR, SIMULTANEOUSLY WITH SCIENTIFIC CENTERS ABROAD, DEVELOPED AN ALGORITHMIC LANGUAGE ANALOG TO ORDINARY MATHEMATICAL LANGUAGE AND WHICH IS CONVENIENT TO MAN. SPECIAL PROGRAMS WERE DEVELOPED FOR CONVERSION OF PROBLEMS, RECORDED IN THE ALGORITHMIC LANGUAGE, INTO PROGRAMS RECORDED IN THE MACHINE CODE.

UNCLASSIFIED

3/3 021 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AN0104940

ABSTRACT/EXTRACT--OUR UKRAINIAN COLLEAGUES DEVELOPED SYSTEMS OF EQUIVALENT CONVERSIONS OF ALGORITHMS AND PROGRAMS AND PROPOSED NEW METHODS FOR EVALUATING EFFICIENCY OF COMPUTERS AND SYSTEMS OF MATHEMATICAL SUPPORT. THIS ACTIVITY STARTED A NEW DIRECTION IN CYBERNETICS WHICH PROMISES A NEW LEAP FORWARD IN THE SOLUTION OF THE PROBLEM OF PROGRAM AUTOMATION AND COMPUTER DESIGNING. THE EFFICIENCY OF COMPUTERS HAS INCREASED WITH IMPROVEMENT OF MATHEMATICAL SUPPORT. NOW, THERE IS A POSSIBILITY OF SETTING UP A CHAIN OF STATE DATA BANKS OF ALGORITHMS AND PROGRAMS IN THE USSR. THE FIRST IN THE USSR REPUBLIC DATA BANK OF ALGORITHMS AND PROGRAMS UNDER THE ACADEMY OF SCIENCES UKRAINIAN SSR WAS PUT INTO OPERATION IN THE UKRAINE. TODAY, THE DATA BANK IS ON THE PAR WITH DATA BANKS OF THE MOST PROMINENT FOREIGN FIRMS AND REPRESENTS THE LARGEST BRANCH OF THE STATE DATA BANK OF THE USSR.

UNCLASSIFIED

USSR

GRINCHENKO, T. A., DORODNITSYNA, A. A., KLIMENKO, V. P., FISHMAN, Yu. S.

"The MIR-2 System of Computer Analytic Transforsm"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 21-25(Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V647, by the authors).

Translation: Certain functional peculiarities of the MIR-2 system of analytic transforms and principles of its machine realization are presented.

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USSR UDC: 621.391.883.2

DORODNOV, I. L.

"On Improving Resistance to Interference in the Reception of Discrete Messages in Channels With Echo Signals"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 51, pp 57-61 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A39)

Translation: The article discusses the possibility of improving the resistance to interference of short-wave communications systems with a test pulse as a result of bilateral processing of the elements in the working packet. The corresponding complication of the reception equipment is evaluated together with the reduction in the probability of erroneous reception. Resumé.

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USSR

UDC 621.391:519.27

DORODNOV, I. I.

"Cyclic Synchronization by a Set of Attributes"

Radioelektronika v nar. kh-ve SSSR. Ch. I -- V sb(Radio Electronics in the National Economy of the USSR. Part 1 -- collection of works), Kuybyshev, 1970, pp 204-213 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A36)

Translation: It is demonstrated that it is possible to decrease synchronization costs (complication of the channel forming equipment, additional energy expenditures, and so on) in multichannel communications systems with time multiplexing by using so-called noncontrast markers for proper distribution of the received messages with respect to the terminal devices. These markers are also simultaneously carriers of several cycle limit markers. There is 1 illustration and a 6-entry bibliography.

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USSR

UDC 547.75

ZHUNGIYETU, G. I., DRAGALINA, G. A., and DOROFEYENKO, G. N., Chemistry Institute of the Academy of Sciences of the Moldavian SSR, Kishinev

"Reaction of Oxindoles with β-Diketones"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, Sep 73, pp 1271-1272

Abstract: In the reaction with acetylacetone in presence of hydrogen chloride, oxindole and 1-acetyloxindole form a mixture of approximately equal quantities of 3-isopropylideneoxindole, 1-oxonia-2,4-dimethylcarbazole chloride and methyl ester of o-aminophenylacetic acid hydrochloride. In case of other 1- and 5-substituted oxindoles it was possible to isolate 3-isopropylidene derivatives.

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USSR UDC 547.759.1'753'756

ZHUNGIYETU, G. I., DRAGALINA, G. A., and DOROFEYENKO, G. N., Chemistry Institute, Academy of Sciences of Moldavian SSR, Kishinev

"Reactions of Indoles and Hydroxyindoles With Some Aldehydes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 73, pp 40-44

Abstract: 3,5-Di-tert-butyl-4-hydroxybenzaldehyde (I) reacts with indole and 2-methylindole yielding derivatives of di(indolyl-3)methane; with hydroxyindole and 1-methyloxyindole (I) yields derivatives of 3-arylideneoxyindole. With salicylaldehyde hydroxyindoles form 3-(O-hydroxybenzylidene)hydroxyindoles. In reactions with arylglyoxals hydroxyindoles yield (hydroxyindolyl-3)aroylcarbinols which under the influence of acetic acid dehydrate to 3-phenacylidenehydroxyindoles. But the starting carbinols and their products in reactions with hydrazine form 3'-arylspiro(hydroxyindol-3,5')-Δ^2-pyrazolines.

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1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STEROIDS CONTAINING HETEROATOMS IN THE NUCLEUS OR SIDE CHAIN OF THE MOLECULE -U-

AUTHOR-(03)-ZHUNGIYETU, G.I., DOROFEYENKO, G.N., SAVIN, B.M.

COUNTRY OF INFO--USSR

SOURCE--USP. KHIM. 1970, 39(4), 646-61

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL SYNTHESIS, HORMONE, CHOLESTEROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0259 STEP NO--UR/0074/70/039/004/0646/0661

CIRC ACCESSION NO--AP0120949

UNCLASSIFIED

2/2 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0120949 PROCESSING DATE--30OCT70

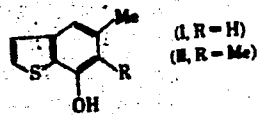
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 79 REFERENCES THROUGH 1966 COVERING METHODS OF SYNTHESIS OF STEROIDAL COMPDS. CONTG. N, O, AND S ATOMS. THE BIOL. ACTIVITY OF SUCH COMPDS. IS DISCUSSED BRIEFLY; COMPDS. WITH N AND O ATOMS IN THE SIDE CHAIN TEND TO INTERRUPT THE SYNTHESIS OF CHOLESTEROL AT THE 24 DIHYDROCHOLESTEROL STAGE AND LEAD TO AN ACCUMULATION OF THIS IN THE BLOOD. FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

G.N. DOROFEYENKO

Acc. Nr: AP0049956 Abstracting Service: CHEMICAL ABST. Ref Code: 4170 UR 0409

90170m Preparation of 7-hydroxy derivatives of thionaphthene. New means for synthesizing thionaphthenic acid. Dulenko, V. I.; Katts, I. G.; Dulenko, L. V.; Dorofeenko, G. N. (Donets. Otd. Fiz. Org. Khim., Donetsk, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 134 (Russ). Thieno[2,3-*c*]pyrylium salts prepd. by acylation of 3-acetonylthiophene opened the ring in alkali to form 2-acyl-3-acetonylthiophenes which then



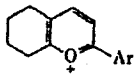
(I, R = H)
(II, R = Me)

cyclized to 7-hydroxythianaphthenes. Thus, in aq. alc. NaOH was prepd. 5-methyl-7-hydroxythianaphthene (I), m. 68°, and 5,6-dimethyl-7-hydroxythianaphthene (II), m. 99–100°.
G. M. Kosolapoff

REEL/FRAME
19801894

Acc. Nr: AP0048811 Abstracting Service: CHEMICAL ABST. Ref. Code: 4170 2R0366

90202f Synthesis of pyrylium salts by the cross condensation of ketones with ethyl orthoformate. Dorofeenko, G. N.; Olekhnovich, E. P. (Rostov.-na-Donu Gos. Univ., Rostov-on-Don, USSR). *Zh. Org. Khim.* 1970, 6(1), 192 (Russ). The reaction of cyclohexanone or cycloheptanone with $HC(OEt)_3$ and an appropriate MeCOAr (Ar = aryl group) in the presence of $HClO_4$ gave, resp., 2-phenyl-5,6-tetramethylenepyrylium chloride, 2-phenyl-5,6-pentamethylenepyrylium chloride, or their 2-(3,4-dimethoxyphenyl) analogs. The reaction involves the formation of $HC^+(OEt)_2ClO_4^-$ and its addn. to the cyclicketones giving the intermediate 3-ethoxy-5,6-cycloalkylenepyrylium ions which



(I)

react with the aromatic ketones giving 2-arylpyrylium salts (e.g. I).

CPJR

REEL/FRAME
19800574

1/2 01 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF POLYPHOSPHERIC ACID IN THE SYNTHESIS OF OMEGA,OMEGA, DIARYL,SUBSTITUTED ACETOPHENONES; 3,4,DIARYL,SUBSTITUTED 2,BENZOPYRYLIUM

AUTHOR-(02)-KUZNETSOV, YE.V., DORUFEYENKO, G.N.

D

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 578-81

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHORIC ACID, CHEMICAL SYNTHESIS, ACETOPHENONE, QUINOLINE, PERCHLORATE, BENZENE DERIVATIVE, AMMONIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1530 STEP NO--UR/0366/70/006/003/0578/0581

CIRC ACCESSION NO--AP0112524

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION OF VERATROLE WITH BZCH(OH)PH, PHCH(OH)CO SUB2 H, OR BZCHO IN POLYPHOSPHORIC ACID GAVE 62-3PERCENT 3,4-(MEO) SUB2 C SUB6 H SUB3-CHRCOR PRIME1 (I) (R, R PRIME1 GIVEN): PH, PH; PH, 3,4-(MEO) SUB2 C SUB6 H SUB3; 3,4-(MEO) SUB2 C SUB6 H SUB3, PH; RESP. HEATING I (R EQUALS R PRIME1 EQUALS PH) WITH AC SUB2 O AND HCLO SUB4 GAVE 6,7,DIMETHOXY,3,4,DIPHENYL,1,METHYL,2,BENZO, PYRYLIUM PERCHLORATE. SIMILARLY, 6,7,DIMETHOXY,1,3,4,TRIPHENYL, 2,BENZOPYRYLIUM AND 6,7,DIMETHOXY,1,BENZYL,3,4,DIPHENYL,2, BENZOPYRYLIUM PERCHLORATES WERE PREPD. 6,7,DIMETHOXY,3,4, DIPHENYL,1,METHYLISOQUINOLIEN, AND 1,BENZYL,6,7,DIMETHOXY,3,4, DIPHENYLISOQUINOLIEN WERE PREPD. FROM NH SUB3 AND THE RESP. PERCHLORATE.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NEW PROCESS FOR SYNTHESIZING 3 XOOPAPAVERINE -U-

AUTHOR-(02)-DOROFEYENKO, G.N., KOROBKOVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 249-50

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC SYNTHESIS, ALKALOID, HETEROCYCLIC NITROGEN COMPOUND, NARCOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0860 STEP NO--UR/0079/70/040/001/0249/0250

CIRC ACCESSION NO--AP0124523

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124523
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SELF ACYLATION OF HOMOVERATRIC ACID IN EXCESS POLYPHOSPHORIC ACID AT 90-5DEGREES, 10-15 MIN GAVE I, M. 153DEGREES, AND 95PERCENT YIELD. HOMOVERATRIC ACID AND NH SUB4 OAC IN HOT ACOH GAVE 85PERCENT 3 OXOPAPAVERINE (II), M. 232DEGREES.
FACILITY: ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

USSR

POPOV, L. G., and DOROFEYEV, A. D.

"Determination of Parameters of Annular Jet With Diffusion Combustion Flame Propagating Along a Heat-Insulated Circular Cylinder"

Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp 66, pp 42-48 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B1084, by Yu. F. Dityakin)

Translation: The article solves the problem of diffusion combustion in an annular jet propagating along a heat-insulated circular cylinder. The method of the equivalent problem in heat-conductivity theory is used. Taken as starting point is a system of partial equations for three functions: jet velocity head, excess heat content, and excess concentration. Initial and boundary conditions are formulated for inner and outer flame zones. The dynamic problem is solved independently of the heat and diffusion problem. In solving the dynamic problem, dimensionless velocity head is used as the sought quantity, and solution of the obtained equation is found with the help of a Laplace transform. The heat and diffusion problems are solved separately for inner and outer flame zones with subsequent linkup at the flame boundary. The solution is also obtained with the help of a Laplace

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USSR

POPOV, L. G., and DOROFEYEV, A. D., Tr. Leningr. in-t aviats. priborostr., 1970, vyp 66, pp 42-48

transform. Expressions are found for temperatures and concentrations in each flame zone. A formula is given for reduced flame length.

2/2

USSR

UDC 620.193+539.24

SEMIN, YE. G., SKORIKOV, YE. A., BALASHOV, D. V., DOROFEYEV, B. YU., KAL'NITSKAYA, E. A., Novocherkassk Polytechnic Institute

"Oxidation Resistance of Fe-Ni-Al-Co-Based Alloys in the Air at 1280°"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 718-719

Abstract: A study was made of the oxidation resistance of alloys based on Fe-Ni-Al-Co used in the production of permanent magnets in the air at 1280° as a function of the content of the technological additives Co, Ti, Nb, and S. The oxidation products were investigated by x-ray, electron diffraction and metallographic methods using the URS-50IM and the EEIM-1 devices and the MIM-7 microscope. The oxidation of the alloys takes place nonuniformly. The outer layer of the scale is formed of coarse regular crystals elongated perpendicular to the surface. The longer the experiment and the higher the temperature, the larger are the crystals. The inside layer of the scale is formed of small equant grains and is bonded tightly to the metal. The scale becomes thicker when the specimens are held up to 3 hours at 1280°.

The composition of the scales is presented. The oxidation law of the alloys with time is parabolic in the first 10 minutes and then linear, which is connected with continuous destruction of the oxide film. Thus, alloying the

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SEMIN, YE. G., et al., Zashchita Metallov, Vol 8, No 6, 1972, pp 718-719

Fe-Ni-Al-Co alloys with technological additives has little effect on their corrosion resistance; therefore their thermomagnetic treatment must be carried out in the presence of a protective atmosphere or protective coatings.

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USSR

UDC 621.791.75.001.5:548.73/.75

BOLDYREV, A. M., Candidate of Technical Sciences, DOROFEYEV, E. B., Engineer, and ANTONOV, Ye. G., Engineer

"Control of Crystallization of Metal during Fusion Welding"

Moscow, Svarochnoye Proizvodstvo, No 6, 1971, pp 35-37

Abstract: The most universal method of producing a finer metal seam structure is that of regulating the degree of concentration supercooling by applying oscillations to the welding bath. This article reports on a study involving melting of plates measuring 100 by 200 mm with an electric DC arc, in which an external magnetic field was applied to the welding bath, created using a magnetizing coil installed on the air-cooled nozzle of a welding torch. It is concluded that this contactless method of generating oscillations in the conducting liquid metal is the most promising technological method of introducing oscillations to the welding bath. A finer metal seam structure was observed during induction of both constant and variable magnetic fields. The optimal pulsating magnetic field frequency was found to be 5-16 Hz.

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USSR

UDC:519.48

DOROFEYEV, G. V.

"Nilpotency of Right-Alternative Rings"

Algebra i Logika [Algebra and Logic], Vol. 9, No. 3, 1970, pp. 302-305 (Translated from Referativnyy Zhurnal Matematika, No. 12, 1970, Abstract No. 12A222 by K. Zhevlakov)

Translation: It is proven that in right-alternative rings, right nilpotency does not indicate nilpotency even for finite-dimensional algebras. This gives a negative answer to a question put forth for right-alternative rings over ten years ago (RZHMat, 1958, 164), the positive answer to which in the alternative case (Ibid.) has played a key role in the solution of many problems in the theory of alternative rings.

1/1

Acc. Nr: AP0045912

Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST.

Ref. Code: UR 3663

I.D. DOROFEYEV

A70-22469 # Strength and durability problems involved in the designing and exploitation of limited-production energy engines with a long service time (Zadachi o prochnosti i dolgovechnosti, voznikaiushchie pri razrabotke i ekspluatatsii maloseriinykh energomashin bol'shogo resursa). I. D. Dorofeev, I. A. Klimenko, and V. I. Nikolaev. *Problemy Prochnosti*, vol. 2, Jan. 1970, p. 86-90. 6 refs. In Russian.

Analysis of the designing and exploitation processes of a gas turbine blade. Topics discussed include: (1) long-time strength of the EI617 alloy in different media, (2) fatigue strength of the same alloy at 750 C in different media, (3) static durability of the notched and smooth samples at 850 C, and (4) effect of a cyclic loading and heating on the long-time strength at 800 C.

Z.W.

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ACS,

REEL/FRAME
19780957

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USSR

UDC 911.3.616.9.598.2

DOROFEYEV, K. A.

"The Significance of Migratory Birds in the Distribution of Virus Disease"

V sb. Virusn. bolezni s.-kh. zhivotnykh. Ch. 2 (Virus Diseases of Farm Animals. Part 2 -- collection of works), Moscow, 1970, pp 207-208 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.41)

Translation: Migratory birds are capable of transporting viruses over considerable distances. They contribute to the exchange of various tick species between countries, and facilitate the creation of new foci of anthropozoonotic disease.

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USSR UDC 619:616.9-022.6+636.1+636.2+636.4+636.52/.58

DOROFEYEV, K. A.; YAMASHEV, S. G.

"Some Ecological and Epizootiological Characteristics of Animal Diseases Caused by Viruses"

V sb. Uch. Zap. Kazan. vet. in-ta (Scientific Writings of the Kazan Veterinary Institute), 1969(1970), No 104, pp 10-16 (from RZh-Zhivotnovodstvo i Veterinariya, No 2, Feb 71, Abstract No 2.58.588)

[No abstract]

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1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--LAUNCHING -U-

AUTHOR--DOROFEYEV, V.

COUNTRY OF INFO--USSR

SOURCE--KOMSOMOL, SKAYA PRAVDA, APRIL 25 1970, P 1 COL 6

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHIPYARD, REFRIGERATION EQUIPMENT, TRAWLER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0067 STEP NO--UR/9007/70/000/000/0001/0001

CIRC ACCESSION NO--AN0100626

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